

**HIGH ENERGY DF CHEMICAL LASER GAIN GENERATOR
AND RELATED METHOD FOR ITS FABRICATION**

ABSTRACT OF THE DISCLOSURE

A DF or HF chemical laser gain generator fabricated by a platelet technique in which internal passages are more easily formed because the generator is made as a stack of thin platelets that are separately etched and then stacked together. The gain generator is water cooled through passages formed in it during the platelet fabrication process. Water cooling results in lower and more uniform operating temperatures and gas pressures, allowing the use of stronger metals which facilitate the elimination of supporting structures that can degrade laser beam quality. The fabrication method allows for the elimination of gas dynamic and thermally induced density gradients which further degrade laser beam quality.